ADNOL™ Clean

Cleaning concentrate for plastics processing machines
Compatibilizer for incompatible polymers and recyclates

Product description and application:

ADNOL™ Clean is a general purpose cleaning concentrate for thermoplastics processing machines. **ADNOL™ Clean** quickly and thoroughly removes residue from screws, cylinders and hot runner tools in injection molding and extrusion lines. Change of polymers and color are possible without any effort and problems.

Advantages of **ADNOL™ Clean**:

- All round cleaning solution for all thermoplastics, excellent compatibility
- Fast, thorough and residue free cleaning for change of plastics and color, short downtime
- Saves labor and prevents cleaning at regular intervals
- Min. waste due to recyclability up to 50 % dilution – max. cost effective
- Also recommended before change from high viscosity (low MFI) to low viscosity (high MFI) polymers, thick to thin walled injection molding parts and the final cleaning prior to shut down of machines.

Dosage recommendation:

The recommended quantity of **ADNOL™ Clean** depends on the situation. Best results are achieved if used undiluted and removed with high rotation speed after about 5 minutes exposure at idling heat, to be repeated if required. After cooling and grinding **ADNOL™ Clean** can be reused, even if discolored and diluted.
When using **ADNOL™ Clean** for the first time it is recommended performing a thorough and longer cleaning process.
When exceeding processing temperature of 400 °C air ventilation and suction is recommended to take care of wax vapors (non-corrosive and not toxic).

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Consumption, application and processing of our ADNOL ™, as well as your production based on our technical advice, are outside our control and are therefore entirely your responsibility. Our ADNOL ™ is sold in accordance with our current general terms and conditions of sale and delivery.

Advantages of **ADNOL™ Clean** as **compatibilizer**

- **ADNOL™ Clean** works as a novel ***compatibilizer*** for incompatible polymers and recyclates.
- Adding 5 – 20 % **ADNOL™ Clean** enables perfect homogenization of PE/PP, PE/PS, PC/PA, PE/PVC, PE/PET, etc. This allows development of new product applications and a new life cycle for polymer waste previously discarded as the products could not be reprocessed.
- **ADNOL™ Clean** also works for recycled plastics, which are containing mixed polymers, impurities, damaged from previous heat histories and different previously added stabilizers.

Properties:

- Environmentally friendly and side effects free
- Composition: blend of wax, surfactants, polymers and nonabrasive mineral fillers
- Change of state: melting point > 80 °C, no decomposition products, odorless and recommended for use from 130 to 400 °C, with optimal processing temperature at 300 °C
- Appearance: white micro compound (dry blend), dust free
- Packing: cartons with PE bags of 25 kg net (bulk density approx. 900 g/l)
- Labelling: all raw materials are physiologically safe and certified for food and medical application according to BGVV (refer to safety data sheet)

Some cleaning application examples:

➢ ***Change from Polyamide black to ABS white:***

Injection molding machine with size-50 screw: addition of approx. 1 kg **ADNOL™ CLEAN**, undiluted, 5 min. exposure at 260°C and subsequent removal at highest rotation speed, repeat with 500g, then approx. 2 kg white ABS, machine is clean and no more finished parts rejects.

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- ***Change from PP blue to PP yellow:***

Extruder with size 40 screw, cleaned with the tool, approx. 2 kg throughput of undiluted **ADNOL™ CLEAN**, resulting in not only blue, but also black and red melt, according to the colors processed earlier, i.e. also older deposits are dissolved from the screw and the cylinder. To be followed by 1 kg of a 1:1 blend with virgin PP, then change to the new color with the following result: machine is clean and no rejects. Advantage: previously the screw needed to be retrieved and cleaned manually with waste of time of up to six hours, compared to approx. 5 minutes with **ADNOL™ CLEAN**.

- ***Change from PS white to PS transparent:***

Extruder with size 60 screw, production of flat sheets for thermoformed packaging: throughput of approx. 6kg 1:1 **ADNOL™ CLEAN** blend with virgin PS, the mass pressure inside the extruder decreases, i.e. the cleaning blend is free flowing and can be well processed. Afterwards trouble-free transition to transparent PS.

- ***Cleaning after injection molding of PEEK, PEK, PEI at 400°C:***

Normally the screws must be retrieved and cleaned by sanding, which requires several hours of work. Instead add approx. 1-2 kg of undiluted **ADNOL™ CLEAN**. An inspection of the retrieved screw shows that it is completely clean. The high temperatures produce wax-like, non-toxic vapors, which can be easily extracted.

- ***Cleaning of hot channel tools:***

Addition of a 1:1 **ADNOL™ CLEAN** blend until the emerging melt is no longer discolored. Thereafter transition to intended plastic pellets. Retrieval and disassembly of the tool is no longer required. Manifold and nozzles are completely cleaned.

- ***Cleaning of mixed screws on injection molding machines with kneading zones:***

Normally, the screws must be retrieved for complete cleaning. Only approx. 1.5 kg **ADNOL™ CLEAN** was required for a thorough cleaning of a size 45 mixing screw (3 zones with mixing head). For control purposes, the machine was put on standby in heated condition for one hour. After this, injected was performed without displaying any discoloration, i.e. there were no more deposits and the machine was already completely clean.

- ***Cleaning of degassing screws in compounding extruders:***

Deposits form in both compression zones of the screws and usually they must be retrieved for sanding. **ADNOL™ CLEAN** makes this process redundant.

- ***Cleaning of older injection molding machines:***

Screw and cylinder are often damaged by abrasion, which results in unwanted deposits, which can be easily and completely removed with **ADNOL™ CLEAN**.

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